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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,745	07/03/2003	Hideo Morimoto	07700.036001	5618

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EXAMINER

DEB, ANJAN K

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/613,745

Applicant(s)

MORIMOTO, HIDEO

Examiner

Anjan K Deb

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/01/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Reference to claim numbers should be deleted (see for example “as set forth in claim 7”, in page 5 line 18 of specification).

Appropriate correction is required.

Claim Objections

2. Claims 4-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-8 not been further treated on the merits.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga (US 6,234,031 B1).

Re claim 1, Suga discloses detective member 107 and first electrode 103 opposite detective member, second electrodes 106 arranged between detective member 107 and first electrode 103 and displaceable with detective member towards the first electrode 103, a pressure sensitive resistive member 105 (deformation member), first 110 and second 111 switching electrodes (transistors)(Fig. 7). In the embodiment of Figure 6 Suga teaches detecting displacement by change in electrostatic capacity, which is considered analogous to detecting a change in electrical resistance due to pressure sensitive displacement of deformation member (see column 3 lines 44-54).

Suga lacks one or more second switching electrodes arranged between detective member and first switching electrodes and the second switching electrodes being contactable with first switching electrodes increasingly with displacement of the detective member.

In a prior art (disclosed by Suga, column 3 lines 44-60) piezoelectric resistors are used as the pressure sensors (pressure sensitive resistive layer), the resistance values of the piezoelectric resistors varied by the deflective deformation of the insulating layer are utilized to output electric signals using switching electrodes (micro-conductors) wherein two electrodes disposed across a gap are brought into contact to establish a conducting state so that electric signals corresponding to the pressure distribution are outputted.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Suga (embodiment Fig. 6) by adding switching electrodes disclosed by Suga (prior

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art disclosed by Suga, column 3 lines 44-60) to establish a conducting state so that electric signals corresponding to the pressure distribution are outputted.

Re claims 2,3 Suga discloses first and second substrate (101, 107) (Fig. 6) having first and second electrode (103,106) respectively on its surface.

Suga lacks first and second switching substrate for first and second switching electrodes.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Suga (embodiment Fig. 6) by adding first and second switching substrate for mounting the first and second switching electrodes as disclosed by Suga (prior art disclosed by Suga, column 3 lines 44-60) to establish a conducting state so that electric signals corresponding to the pressure distribution are outputted.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nagai (US 3,960,044) discloses pressure detecting sensor in electronic musical instrument comprising pressure sensitive resistance layer disposed between a first electrode and second displaceable electrode.

Duncan (US 4,852,443) discloses capacitive pressure sensor.

Morimoto (US 20040104735 A1) discloses capacitance type pressure sensor comprising detective member, moveable displacement electrode, and first and second switching electrodes (Fig. 24).

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Okada (US 20040189340 A1) discloses resistance type of pressure sensor for detecting direction and a magnitude of an external force applied to a predetermined working point on the basis of changes in resistance values of pressure sensitive resistance elements formed on a substrate.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



Anjan K. Deb

Patent Examiner

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2/1/05

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